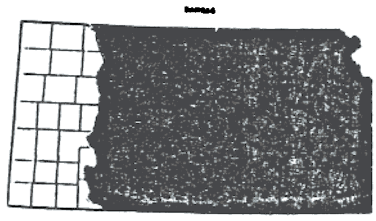
GRAVELLY HILLS

KANSAS RANGE SITE DESCRIPTION

1 Location of Site:



Land Resource Areas 72 and 77
Central High Table Land and
Southern High Plains

2. Climate:

See climate for LRA's 72 and 77
(Filed in the front of Section II-E)

3. Topography:

This site occurs on complex slopes commonly greater than 10 percent.

4 Soils and Hydrological Characteristics:

a. The soils on this site are shallow to moderately deep over sand and gravel. These soils contain significant amounts of gravel throughout the root zone. The available water capacity of these soils is low.

b. The major soils that characterize this site are:

Dix	Otero gravelly complex
Gravelly broken land	Schamber

c. Wind erosion on these rangelands is a severe hazard if the vegetative cover is destroyed.

Following excessive wind erosion, the gravel particles left in place create a desert pavement condition. Without a protective vegetative cover the evaporation loss from these soils is high. This results in the site becoming more droughty than it was.

5. Climax Vegetation:

a. The natural potential vegetation of this site is a mixed grass prairie. Sideoats grama, little bluestem, and big or sand bluestem are the dominant forage producers in this condition. Combined they will make up about 50 percent of the total annual yield. A variety of forbs make up about 15 percent of the total production. During dry years this site may have frequent voids between plants resulting in an open plant community.

b. Guidelines for Determining Range Condition:

(Percentage of total production by weight)

Grasses and Grasslike - 80 percent			Forbs - 15 percent		Shrubs and Cacti - 5 percent	
	15	big bluestem		bush morningglory		aromatic sumac
		sand bluestem		common breadroot		sand sagebrush
				scurfpea	5	small soapweed
50	15	little bluestem		dotted gayfeather		pricklypear
	25	sideoats grama		heath aster		
	5	switchgrass	10	nineanther dalea		
				purple prairieclover		
	10	blue grama		slimflower scurfpea		
	5	buffalograss		upright prairieconeflower		
25	10	hairy grama		white prairieclover		
	5	sand dropseed				
				broom snakeweed		
		Japanese brome		curlycup gumweed		
5		perennial threeawns		lambsquarter		
		sand muhly		Louisiana sagewort		
		windmillgrass	5	scarlet globemallow		
				Texas croton		
				western ragweed		
				yellowspine thistle		

c. Invaders common to this site are annual threeawn, kochia, little barley, russianthistle, sixweeks fescue, tansymustard, tumblegrass, and white polygala.

6. Management Implications:

This site occurs throughout the landscape on stream terraces, alluvial fans, footslopes, and on gravelly tertiary uplands.

The fragile nature of this site makes it easy to overgraze. Preferred forage plants on this site are generally less vigorous than on adjacent sites. They also green up earlier following spring rains as the soil is porous and responds rapidly to changes in temperature. These factors attract grazing animals to the site early in the grazing season. Lush growth of the immature forage will keep them coming back for more. Because of the heavy grazing pressure and the low available water capacity of the site, the tall and mid grasses are rapidly replaced by short grasses and less desirable forbs when continuously grazed.

A grazing management program that includes proper grazing use and frequent rest periods will help improve or maintain the productive capacity of this site.

7. Wildlife Considerations:

This plant community is generally favorable for small rodents, blacktailed jackrabbits, prairie dwelling reptiles, and coyotes. During the early spring when annual grasses and forbs begin growth, this site provides the first lush, green forage for native herbivores.

8. Other Uses and Values:

This site is frequently utilized for small gravel pits. The material is usually utilized for roadfill material.

Due to the gravelly, droughty nature of this site, uses other than rangeland and gravel pits are very limited.

9 Herbage Production Guidelines:

The following guidelines are based on available clipping data when this site is in excellent condition. Vigor of principal forage species, time of burning, if fire is used, as well as growing conditions, influence annual herbage production.

Growing Conditions	Total Air Dry Herbage Pounds/Acre	Kilograms/Hectare
Favorable	1,500-1,800	1,680-2,020
Normal	1,100-1,500	1,230-1,680
Unfavorable	700-1,100	780-1,230

10. Guide to Initial Stocking Rates:

Range Condition	Percent Climax Vegetation	Acres/AU Yearlong	AU Months Per Acre	Hectares/AU Yearlong	AUM's per Hectare
Excellent	76-100	25-30	.4	10-14	1.0
Good	51-75	35-50	.3	14-20	.75
Fair	26-50	50-80	.2	20-32	.5
Poor	0-25	80+	.1	32+	.25

These guidelines are considered safe initial stocking rates from which a sound management program can be built. Grazing only during the dormant season or use of a specialized grazing program will usually allow a substantial increase in the stocking rates shown.

11. Relative Preference of Plant Species:

Preferences of plant species by classes of livestock and uses by wildlife will vary from year to year and season to season. The table below is what might be expected under average climatic conditions and good management.

Forage Preferences	Wildlife Preferred Uses
H = High	C = Cover
M = Medium	F = Food
L = Low	N = Nesting

Plant Species	Animal Species	
	Cattle	Deer
big or sand bluestem	H	C
blue grama	H	--
buffalograss	H	--
bush morningglory	H	F
dotted gayfeather	M	F
hairy grama	L	--
heath aster	M	F
Japanese brome	M 1/	F 1/
little bluestem	H	C
perennial threeawns	L	--
purple prairieclover	L	F
sand dropseed	M	
sand muhly	M	--
sand sagebrush	L	C
sideoats grama	H	--
Texas croton	L	--
western ragweed	M	F
windmillgrass	M	

1/ Has a high preference during lush growth periods.

Reference:

Anderson, Kling L. and Clenton E. Owensby. 1969 Common Names of a Selected List of Plants. Kansas State University Tech. Bul. 117.